tailed at some length. A case of scarlet fever of undoubted diagnosis was seen at the Central Emergency Hospital and a history elicited of a brother that had had measles one week before. This supposed measles case on inspection showed a slight branny desquamation of the skin of the neck similar to that of measles, but the sign being positive, the case was also isolated and underwent a typical desquamation later. This would illustrate the value of the sign in prophylaxis where the necessity for positive diagnosis calling for quarantine is desired.

In most of the cases which were seen on the first day of the eruption (five) the sign was not as deep in color as on the succeeding day when the eruption had become more pronounced in color. No cases of this series were seen before the eruption took place so that further investigation into the question as to its value as a very early sign is desirable before the subject can be regarded as definitely settled.

Five cases seen by other doctors were reported as having the sign positive, making twenty-three in this series.

In addition to the elbow folds the skin of the folds of the groin, nates, popliteal space, axilla, wrists and base of the neck were observed. While the sign was recognized in these situations in many of the cases, it was not so pronounced nor so constant as in the elbow and always disappeared sooner than the elbow sign.

The writer has been assisted by a very simple manoeuver to accentuate the appearance of the sign by pressing the skin over the front of the elbow. This causes the familiar momentary paling of the general eruption but leaves the red stripes of the sign more prominent by contrast with the surrounding white area.

The purpose of this paper has been to draw the attention of the profession to this sign rather than to critically investigate its value or occurrence. The writer is convinced that it really exists as a part of the picture of scarlet fever both during and, in the majority of cases, after the eruption has manifested itself. The fact that it will appear in measles will not detract from its usefulness as much as might appear since those cases of measles in which it was observed were of the most pronounced type, with a tendency toward the hemorrhagic. In every case where doubt as to the diagnosis had been expressed and the sign was present, the course of the disease proved it to be scarlet fever.

The writer takes this opportunity of expressing his thanks to Dr. D'Arcy Power, who placed the City and County's service at the author's disposal after his term had expired; also the Sanitary Inspectors, Drs. Butler, Curtis, Kuykendahl and Muller, who have co-operated in the work of investigating this sign.

To briefly recapitulate:

1. The sign approximately as described by Pastia has been identified in 100% of the cases.

2. It is of use in diagnosis of cases where the rash is atypical.

3. It is of use in diagnosis of cases seen after the rash has subsided and before desquamation is pronounced.

4. Those cases of other diseases (measles) in which the sign was present were so palpably not scarlet fever that its value is hardly to be regarded as impaired by this occurrence.

THE CELL IN MODERN MEDICINE.*

By HOELL TYLER, M. D., Redlands.

Whether the living beings which we call cells are, or are not, the simplest form of life, we do not know; there are some facts which tend to show that they are not.

All animals and plants are either unicellular or multicellular organisms. The unicellular organisms have the same basic physiologic functions that the multicellular organisms have. They take in foodstuff, digest it, assimilate it, reproduce their kind and adapt, or adjust, themselves to their surroundings or environment.

The individual cells of the multicellular organisms possess all of these functions, but in different degrees. As we ascend the scale from the simplest forms of life to the most complex, we observe a constantly increasing degree of differentiation. For instance, in some of the lower forms of marine life, the tissues of the animal flow around an article of food and engulf it, or limbs, like tentacles, cover it. The cells of the surface coming in contact with the food, secrete an enzyme, or enzymes, which digest it. When the process of digestion is completed the body flows away, or the tentacles open out, and the excreta is left. In animals a little higher in the scale, a temporary digestive tract is formed constantly in one part of the body. Here is a greater attempt at specialization. In man we have a highly specialized digestive system. We put food into one end of a tube which extends through the body. The cells lining this tube secrete various substances which act upon the different elements of the food and change it so that certain parts are taken up and delivered into the circulating fluids of the body. Some of these cells are highly specialized, and arranged in groups, which we call organs, such as the pancreas, the peptic and salivary glands. Muscle cells, arranged in groups, by their special function of contractility, propel the contents of this tube and finally eject the waste from the lower end. From a time shortly after birth, until the death of the individual, this tube contains chemical substances and unicellular organisms, many of them pathogenic, which, if allowed to pass through the layer of epithelial cells lining this tube, are capable of endangering the life of the individual. In case this layer of cells is broken through, or destroyed in part, other cells at once attempt to protect the body from harm. Witness the process following ulceration and perforation, or the onslaught of disease germs like the typhoid bacillus.

Many of the groups of cells, or organs, connected with the digestive tract, communicate with each other, and have their functions regulated, retarded

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or accelerated, started or stopped, by substances which they secrete, and which are carried from one organ to another through the blood stream, chemical messengers,—a wonderfully interesting field for study.

Again, that most highly specialized group of cells composing the nervous system, regulates and controls, within certain limits, all of these groups of cells, and all of the other cells of the body, except those leading a free and independent existence in the blood stream and among the fixed cells of the organs, the various corpuscles of the blood.

Some of these corpuscles, like the polynuclear and the mononuclear leukocytes, are very slightly differentiated and resemble very closely many of the amebe found in our streams and ponds and the free waters of the globe. These cells feed upon dead leukocytes, dead tissue cells and organisms, pathogenic and non-pathogenic, gaining entrance to the blood stream, or penetrating the protecting layer of cells forming the skin and mucous membranes. They constitute a mobile army marshaling itself to any point needing defense aaginst invading pathogenic organisms. They are endowed, like all cells, with weapons of offense and defense. They manufacture chemical substances capable of poisoning many pathogenic cells, and others, enzymes, which digest them. They also elaborate substances, capable, to a certain degree, of neutralizing, and rendering harmless, the toxines and enzymes, or weapons of offense and defense, of disease germs; namely, antitoxines and antienzymes.

The fixed cells of the body have, in varying degree, these same weapons of offense and defense. Because of the special functions which they have been called upon to perform, the fixed cells have relinquished many of the functions of cells living in a free state. They are dependent for their continued existence, and condition of health, upon the complex processes taking place in this community of living individuals.

It has long been observed that various disease germs attack, as a rule, certain tissues, the other tissues being immune. For instance, the diphtheria bacillus is confined to the upper respiratory tract, the typhoid bacillus to certain glands in the intestine, the gonococcus to the anterior urethra in the male, the pneumococcus to the alveoli of the lung. Under certain conditions, which are worthy of much study, these germs are able to maintain an existence among various other tissues of the body.

This peculiar vulnerability of certain tissues is further illustrated in facial erysipelas. Here we have a strain of streptococci usually commencing their depredations in the skin about the bridge of the nose, or inner canthus of the eye, and being confined to the region of the face and scalp.

Certain tissues have acquired a degree of immunity against organisms prone to attack them. As an instance, the surgeon invades the rectum, the bladder and the urethra, and offers many indignities to the tissues in the presence of various pathogenic organisms, with comparative impunity. The same operative traumatism in other tissues, under like conditions for infection, would be followed by dire results. The same holds good in connection with the other end of the alimentary canal, and the upper air passages.

Man protects himself from vicious and dangerous wild beasts by means of his superior intelligence. He does not even require the aid of much scientific knowledge for success. Empirical knowledge is sufficient. Recently, a celebrated American hunter, "Buffalo" Jones, and his cowboy companions, armed simply with lariats, have been able to overcome the African lion, the king of beasts. But not until much accurate, scientific, correlated knowledge had been acquired, recorded and disseminated, was man able to defend himself individually and collectively against the terrible and deadly horde of microscopic foes surrounding him. Even to-day, lack of intelligence, and the dissemination of this knowledge, is resulting in the destruction of thousands in China by a unicellular organism which has been kept within due bounds on this coast.

For countless ages there has existed an unceasing conflict between the various forms of microscopic life. This conflict is maintained in the culture fluids of the laboratory. It is seen in the septic-tank, instituted for sanitary purposes. The agriculturist finds that the amebe in his soil destroy the bacteria which help to make food for his crops. It is probable that every kind of unicellular organism has acquired, during these ages of strife, weapons of offense and defense. The weapons of offense are toxines, extra-cellular and intra-cellular, together with enzymes. The toxines to poison, the enzymes to digest, liquefy and thus annihilate the foe.

Study of unicellular organisms has entirely changed our conceptions of heredity, because the transmission of acquired characteristics is here very common and observed by everybody.

The subject of immunity, of inflammation, of repair and of regeneration, are matters of physiology and pathology of the cell.

The cells of the nervous system, the most highly differentiated of any in the body, have two functions. They regulate and control, within certain limits, the vital processes of the groups of cells, called organs. the internal economy of the body, and they adjust the organism as a whole to its environment. The cells of the brain stand in direct relationship to one of the most marvelous conditions confronting us in the universe; namely, consciousness. Through these wonderful brain cells, matter and force become aware of their existence.

INTESTINAL HEMORRHAGE IN HERNIA.*

By REXWALD BROWN, M. D., Santa Barbara.

The matter of hernia, simple and complicated, has given rise to such a wealth of literature that it is largely commonplace to present the subject to a body of medical men. It seems hardly possible to add material of moment to the numerous type cases considered from any of the angles, clinical, diagnostic, pathological, and therapeutic. This may be true—our errors lie in assuming that every case

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